

CLAIMS

It is claimed:

- 5 1. A method for purifying an extract of *Tripterygium wilfordii* plant material containing triptolide and related compounds, wherein the extract is formed by
- (a) extracting plant material with aqueous ethanol, and concentrating to obtain a residue; and
- (b) forming a slurry of this residue in an chlorinated organic solvent; partitioning
- 10 the slurry with water for a period of about 10 mins-10 hours; and then removing the water;
- and said purifying comprises the steps of:
- further partitioning the slurry with an aqueous solution of base, removing the aqueous solution of base, and removing at least a portion of the organic solvent from the
- 15 slurry;
- washing the residue with a lipophilic solvent; and
- eluting the residue from a silica gel adsorbent.
2. The method of claim 1, wherein said purifying comprises the steps of:
- 20 (c) partitioning the slurry with an aqueous solution of base, then removing the aqueous solution, and then removing the organic solvent, to obtain a further residue;
- (d) washing the further residue with a hydrocarbon solvent, to obtain a solid product; and
- (e) purifying the solid product by silica gel chromatography.
- 25 3. The method of claim 2, wherein a mobile phase comprising cyclohexane and ethyl acetate is used for said silica gel chromatography.
4. The method of claim 1, wherein said purifying comprises the steps of:
- 30 (c) partitioning the slurry of the residue with an aqueous solution of base, removing the aqueous solution, and removing a portion of the organic solvent, to obtain a concentrated slurry;

(d) adding silica gel to the concentrated slurry, in an amount effective to adsorb the triptolide and related compounds;

(e) washing the residue and silica gel with a hydrocarbon solvent; and

(f) eluting the triptolide and related compounds from the silica gel.

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5. The method of claim 1, wherein said purifying comprises the steps of:

(c) removing the organic solvent from the slurry of the residue;

(d) washing the residue with a hydrocarbon solvent;

(e) forming a further slurry of the washed residue in an organic solvent selected

10 from chloroform, methylene chloride, dichloroethane and mixtures thereof;

(f) partitioning the further slurry with an aqueous solution of base, then removing the aqueous solution, and then removing the organic solvent, to obtain a solid product; and

(g) purifying the solid product by silica gel chromatography.

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6. The method of claim 1, wherein the extracting of step (a) includes three extractions with refluxing ethanol, each using 4-5 mL of ethanol per g of plant material, followed by pooling of the extracts.

20 7. The method of claim 1, wherein the chlorinated organic solvent is selected from the group consisting of chloroform, methylene chloride, dichloroethane and mixtures thereof.

8. The method of claim 1, wherein the slurry formed in step (b) comprises 8-12
25 volumes of organic solvent relative to the residue, and the partitioning of step (b) employs 1/2 to 2 volumes of water relative to the slurry.

9. The method of claim 1, wherein the base is a water soluble hydroxide, carbonate or
30 ammonium, and tetraalkylammonium.

10. The method of claim 9, wherein the base is selected from NaOH, KOH, NaHCO₃, KHCO₃, Na₂CO₃ and K₂CO₃.
11. The method of claim 10, wherein the aqueous solution of base is selected from
5 0.1N-2.5N aqueous NaOH, 0.1N-2.5N aqueous KOH, 10%-15% aqueous NaHCO₃, and 12%-18% aqueous KHCO₃.
12. The method of claim 1, wherein the partitioning with the aqueous solution of base is carried out for about 2 days.
- 10 13. The method of claim 1, wherein, following the removing of the aqueous solution of base and prior to the removing of at least a portion of the organic solvent, the organic solvent is washed with a dilute aqueous acidic solution.
- 15 14. The method of claim 1, wherein the hydrocarbon solvent is selected from linear, branched and cyclic hydrocarbons having 5-7 carbon atoms, and mixtures thereof.
15. The method of claim 14, wherein the hydrocarbon solvent is cyclohexane.
- 20 16. The method of claim 1, wherein the plant material comprises root material.
17. The method of claim 1, wherein the related compounds comprise triptolide and/or 16-hydroxytriptolide.